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AVAGO TECHNOLOGIES, LTD.  
P.O. Box 1920  
Denver, Colorado 80201-1920

ATTORNEY DOCKET NO. 10010189-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Gary B. Gordon et al

Serial No.: 09/812,252

Examiner: Abbas I. Abdulsalam

Filing Date: March 19, 2001

Group Art Unit: 2674

Title: IMPEDANCE SENSING SCREEN POINTING DEVICE

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on August 24, 2006.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) **\$500.00**.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)(1)-(5)) for the total number of months checked below:

<input type="checkbox"/>	one month	\$ 120.00
<input type="checkbox"/>	two months	\$ 450.00
<input type="checkbox"/>	three months	\$1020.00
<input type="checkbox"/>	four months	\$1590.00

☐ The extension fee has already been filled in this application.

☒ (b) Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account **50-3718** the sum of **\$500.00**. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-3718** pursuant to 37 CFR 1.25.

A duplicate copy of this transmittal letter is enclosed.

☐ I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date of Deposit: OR

☒ I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below.

Date of Facsimile: September 19, 2006

Typed Name: Jeff A. Holman

Signature: Jeff A. Holman

Respectfully submitted,

Gary B. Gordon et al

By

Jeff A. Holman  
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Rev 12/05 (Ap/Brief)

SEP 19 2006

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Gary B. Gordon et al. Examiner: Abbas I. Abdulsalam  
Serial No.: 09/812,252 Group Art Unit: 2674  
Filed: March 19, 2001 Docket No.: 10010189-1 / A610.105.101  
Due Date: October 24, 2006  
Title: IMPEDANCE SENSING SCREEN POINTING DEVICE

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**APPEAL BRIEF UNDER 37 C.F.R. § 41.37****Mail Stop Appeal Brief – Patents**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir/Madam:

This Appeal Brief is submitted in support of the Notice of Appeal filed on August 24, 2006 appealing the final rejection of claims 1-35 of the above-identified application as set forth in the Final Office Action mailed May 10, 2006.

The U.S. Patent and Trademark Office is hereby authorized to charge Deposit Account No. 50-3718 in the amount of \$500.00 for filing a Brief in Support of an Appeal as set forth under 37 C.F.R. § 41.20(b)(2). At any time during the pendency of this application, please charge any required fees or credit any overpayment to Deposit Account No. 50-3718.

Appellant respectfully requests consideration and reversal of the Examiner's rejection of pending claims 1-35.

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### **REAL PARTY IN INTEREST**

The intellectual property embodied in the pending application is assigned to Avago Technologies, Ltd.

### **RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present Appeal.

### **STATUS OF CLAIMS**

In a Final Office Action mailed May 10, 2006, claims 1-35 were finally rejected. Claims 1-35 are pending in the application. Claims 1-35 are the subject of the present Appeal.

### **STATUS OF AMENDMENTS**

No amendments have been entered subsequent to the Final Office Action mailed May 10, 2006. Appellant filed a Response after Final to the Final Office Action mailed May 10, 2006, but no amendments to the claims were proposed by Appellant or entered by the Examiner.

### **SUMMARY OF THE CLAIMED SUBJECT MATTER**

Discussions about elements of independent claims 1 and 19 can be found at least at the cited locations in the specification and drawings.

The present invention, as claimed in independent claim 1, provides an apparatus for controlling the position of a screen pointer for an electronic device having a display screen. The apparatus includes a plurality of sensing elements against which a portion of the tip of a human digit may be placed, and a controller coupled to each of the sensing elements for sensing an electrical property at each of the sensing elements. The controller is configured to generate pixel values representing the portion of the tip of the digit placed against the sensing elements based on the sensed electrical property at each of the sensing elements. The controller is configured to generate movement data based on a comparison of successively generated sets of the pixel

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values. The comparison includes comparing a first one of the sets with at least one pixel shifted version of a second one of the sets. The movement data is indicative of motion of the tip of the digit across the sensing elements. (See, e.g., specification at page 6, line 17, to page 10, line 23; Figures 2 and 3; reference numbers 100, 102, and 108).

The present invention, as claimed in independent claim 19, provides a method of controlling the position of a screen pointer for an electronic device having a screen display. The method includes placing a portion of an appendage of the human hand against a plurality of sensing elements, sensing an impedance at each of the sensing elements, generating digital values representing the sensed impedance at each of the sensing elements, the digital values representing digital images of the portion of the appendage placed against the sensing elements, correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage, and adjusting the position of the screen pointer in accordance with the motion data. (See, e.g., specification at page 6, line 17, to page 10, line 23; Figures 2 and 3; reference numbers 100, 102, and 108).

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

1. Claims 1-55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Gillespie et al., U.S. Patent No. 5,880,411 ("Gillespie").

**ARGUMENT****I. The Applicable Law**

The Examiner has the burden under 35 U.S.C. §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Three criteria must be satisfied to establish a *prima facie* case of obviousness. First, the Examiner must show that some objective teaching in the prior art or some knowledge generally available to one of ordinary skill in the art would teach, suggest, or motivate one to modify a reference or to combine the teachings of multiple references. *Id.* Second, the prior art can be modified or

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combined only so long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Third, the prior art reference or combined prior art references must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). These three criteria are also set forth in §706.02(j) of the M.P.E.P. In performing the obviousness inquiry under 35 U.S.C. §103, the Examiner must avoid hindsight. *In re Bond*, 910 F.2d 831, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990), *reh'g denied*, 1990 U.S. App. LEXIS 19971 (Fed. Cir. 1990).

## **II. Rejection of Claims 1-35 Under 35 U.S.C. §103(a) as being unpatentable over Gillespie**

The Examiner rejected claims 1-35 under 35 U.S.C. §103(a) as being unpatentable over Gillespie et al., U.S. Patent No. 5,880,411 ("Gillespie"). Appellant submits that the Examiner has not established a *prima facie* case of obviousness of claims 1-35.

### **A. Rejection of Claims 1-10 and 14-16 Under 35 U.S.C. §103(a) as being unpatentable over Gillespie**

Independent claim 1 recites "the controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements." With respect to independent claims 1 and 19, the Examiner stated that:

Gillespie does not specifically teach "a controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements".

Gillespie on the other hand teaches gesture unit 20, which is used to recognize certain finger gestures performed by a user on a sensing plane 10. Gillespie teaches the gesture unit 20 in terms of determining whether a drag gesture is continuing or is being ended and a new finger action begun by comparing the lift-off finger position and the touchdown finger position (Fig. 1 (20), Fig. 14 (280, 286) and col. 36, lines 56-65).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Gillespie's gesture unit (20) shown in Fig. 1 for the purpose of quantifying the movement of a finger on the sensing plane (10) as taught Gillespie (see Fig. 14 and Fig. 20). (Final Office Action at para. no. 3, page 4).

The gesture unit 20 disclosed in Gillespie generates button-press signals that simulate a three-button (Left, Middle, Right) pointing device. (See, e.g., Gillespie at Fig. 14, and col. 33, lines 27-33). The disclosure regarding comparing a lift-off finger position with a touch-down finger position for the purpose of generating button-press signals does not teach or suggest generating movement data based on a comparison of successively generated sets of pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements, as recited in independent claim 1. There is no teaching or suggestion in Gillespie that the gesture unit 20 could or should be configured to generate movement data as recited in independent claim 1. Thus, Gillespie does not teach or suggest each and every limitation of independent claim 1.

In the Response to Argument section of the Final Office Action, the Examiner stated that:

Applicant argues that the cited reference, Gillespie et al. (USPN 588041 1) does not teach generating movement data based on a comparison of successively generated sets of pixel values. Applicant also argues that Gillespie does not teach correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data across the sensing elements by the appendage.

However, as shown in Fig. 1, Gillespie teaches an outputs of X input processing circuitry 12 and Y input processing circuitry 14 being presented to arithmetic unit 16, which uses the digital information to derive digital information representing the position and pressure of the finger 8 on a sensing plane 10 (col. 9, lines 3-7). Gillespie also teaches that outputs of the arithmetic unit 16 are also directed to gesture unit 20 (col. 9, lines 29-34), which is used to recognize certain finger gestures performed by a user on sensing plane 10. Gillespie elaborates the gesture unit 20 in terms of determining whether a drag gesture is continuing or is being ended and a new finger action begun by comparing the lift-off finger position and the touchdown finger position (Fig. 1 (20), Fig. 14 (280,286) and col. 36, lines 56-65).

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Thus clearly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Gillespie's gesture unit (20) as configured in Fig. 1 notably with an arithmetic unit (16) for the purpose of quantifying the movement of a finger on the sensing plane (10) as taught Gillespie (see Fig. 14 and Fig. 20). (Final Office Action at para. no. 2, pages 2-3).

One of the requirements of establishing a *prima facie* case of obviousness is that "the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2143. The Examiner has acknowledged that "Gillespie does not specifically teach 'a controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements'", as recited in independent claim 1. (Final Office Action at para. no. 3, page 4). Since Gillespie does not teach or suggest each and every limitation of independent claim 1, the Examiner has not established a *prima facie* case of obviousness of claim 1.

Since Gillespie does not teach or suggest each and every limitation of claim 1, it is not clear if the Examiner is relying on Official Notice, or the concept of inherency, in the rejection of these claims. However, as indicated in the Manual of Patent Examining Procedure, "[o]fficial notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known." MPEP § 2144.03(A). "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well known." *Id.* (emphasis in original). The limitations in claim 1 that the Examiner appears to have acknowledged are not explicitly taught or suggested by Gillespie are not well known facts that are capable of instant and unquestionable demonstration as being well known, and it would be inappropriate to simply rely on official notice in this case.

The missing limitations are also not inherent in Gillespie. As the Federal Circuit has stated, "[i]nherent anticipation requires that the missing descriptive material is 'necessarily



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present,' not merely probably or possibly present, in the prior art." *Trintec Indus., v. Top-U.S.A. Corp.*, 63 USPQ2d 1597, 1599 (Fed. Cir. 2002) (quoting *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)). Gillespie does not include a controller that generates movement data in the manner recited in claim 1, and this missing limitation is not "necessarily present" in Gillespie.

In addition, even when obviousness is based on a single reference, there must be a showing of suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). In the present case, the Examiner has not identified any suggestion or motivation to modify the Gillespie reference in a manner that would produce the claimed invention. Rather, despite this issue being raised in Applicant's previous Response, the Examiner has again simply indicated in the above block quote that it would be possible to modify Gillespie, without identifying any teaching, suggestion, or motivation, to make such a modification. Applicant respectfully submits that no motivation for the Examiner's proposed modification can be found in Gillespie. In fact, not only is there no teaching, suggestion, or motivation disclosed in Gillespie to modify the gesture unit 20 to generate motion data as proposed by the Examiner, such a modification would not appear to make logical sense since the system disclosed in Gillespie already includes a motion unit 18. By failing to identify a motivation to modify the Gillespie reference, the Examiner has failed to provide an essential element required to establish a *prima facie* case of obviousness.

In view of the above, Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of independent claim 1, and the rejection of independent claim 1 under 35 U.S.C. §103(a) should be withdrawn. Since dependent claims 2-10 and 14-16 further limit patentably distinct claim 1, claims 2-10 and 14-16 are believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claims 2-10 and 14-16, and the rejection of dependent claims 2-10 and 14-16 under 35 U.S.C. §103(a) should be withdrawn.

**B. Rejection of Claim 11 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

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Dependent claim 11 recites "a conductive rim formed around a perimeter of the plurality of sensing elements." The Examiner has not identified any disclosure in Gillespie that teaches or suggests a conductive rim as recited in dependent claim 11. Since dependent claim 11 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 11 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 11, and the rejection of dependent claim 11 under 35 U.S.C. §103(a) should be withdrawn.

**C. Rejection of Claim 12 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 12 is dependent on claim 11 and recites "wherein the controller further comprises an alternating current signal source coupled to the conductive rim for driving the conductive rim with an alternating current signal." The Examiner has not identified any disclosure in Gillespie that teaches or suggests a conductive rim, or driving a conductive rim with an alternating current signal, as recited in dependent claim 12. Since dependent claim 12 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 12 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 12, and the rejection of dependent claim 12 under 35 U.S.C. §103(a) should be withdrawn.

**D. Rejection of Claim 13 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 13 recites "wherein the controller further comprises an automatic gain controller coupled to the alternating current signal source for controlling the magnitude of the alternating current signal." The Examiner has not identified any disclosure in Gillespie that teaches or suggests an automatic gain controller as recited in claim 13. Since dependent claim 13 further limits patentably distinct claim 1, and is further distinguishable over the cited

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reference, claim 13 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 13, and the rejection of dependent claim 13 under 35 U.S.C. §103(a) should be withdrawn.

**E. Rejection of Claim 17 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 17 recites "wherein the pitch of the plurality of sensing elements ranges between about 10 to 1000 microns." The Examiner has not identified any disclosure in Gillespie that teaches or suggests sensing elements with a pitch as recited in claim 17. Since dependent claim 17 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 17 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 17, and the rejection of dependent claim 17 under 35 U.S.C. §103(a) should be withdrawn.

**F. Rejection of Claim 18 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 18 recites "wherein the pitch of the plurality of sensing elements ranges between about 25 to 250 microns." The Examiner has not identified any disclosure in Gillespie that teaches or suggests sensing elements with a pitch as recited in claim 18. Since dependent claim 18 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 18 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 18, and the rejection of dependent claim 18 under 35 U.S.C. §103(a) should be withdrawn.

**G. Rejection of Claim 32 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

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Dependent claim 32 recites "wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is less than about 2 millimeters by 2 millimeters." The Examiner has not identified any disclosure in Gillespie that teaches or suggests an array with the dimensions recited in claim 32. Since dependent claim 32 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 32 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 32, and the rejection of dependent claim 32 under 35 U.S.C. §103(a) should be withdrawn.

**H. Rejection of Claim 33 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 33 recites "wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is a substantially square array with dimensions of about 1.5 millimeters by 1.5 millimeters." The Examiner has not identified any disclosure in Gillespie that teaches or suggests an array with the dimensions recited in claim 33. Since dependent claim 33 further limits patentably distinct claim 1, and is further distinguishable over the cited reference, claim 33 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 33, and the rejection of dependent claim 33 under 35 U.S.C. §103(a) should be withdrawn.

**I. Rejection of Claims 19-26, 28, and 29 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Independent claim 19 recites "correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage". As described above, Gillespie does not teach or suggest "the controller configured to generate movement data based

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on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements", as recited in independent claim 1. For at least the reasons described above with respect to independent claim 1, Gillespie also does not teach or suggest the above-quoted limitations of independent claim 19.

With respect to independent claims 1 and 19, the Examiner stated that:

Gillespie does not specifically teach "a controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements".

Gillespie on the other hand teaches gesture unit 20, which is used to recognize certain finger gestures performed by a user on a sensing plane 10. Gillespie teaches the gesture unit 20 in terms of determining whether a drag gesture is continuing or is being ended and a new finger action begun by comparing the lift-off finger position and the touchdown finger position (Fig. 1 (20), Fig. 14 (280, 286) and col. 36, lines 56-65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Gillespie's gesture unit (20) shown in Fig. 1 for the purpose of quantifying the movement of a finger on the sensing plane (10) as taught Gillespie (see Fig. 14 and Fig. 20). (Final Office Action at para. no. 3, page 4).

The gesture unit 20 disclosed in Gillespie generates button-press signals that simulate a three-button (Left, Middle, Right) pointing device. (See, e.g., Gillespie at Fig. 14, and col. 33, lines 27-33). The disclosure regarding comparing a lift-off finger position with a touch-down finger position for the purpose of generating button-press signals does not teach or suggest correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage, as recited in independent claim 19. There is no teaching or suggestion in Gillespie that the gesture unit 20 could or should be configured to generate motion data as recited in independent claim 19. Thus, Gillespie does not teach or suggest each and every limitation of independent claim 19.

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In the Response to Argument section of the Final Office Action, the Examiner stated that:

Applicant argues that the cited reference, Gillespie et al. (USPN 588041 1) does not teach generating movement data based on a comparison of successively generated sets of pixel values. Applicant also argues that Gillespie does not teach correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data across the sensing elements by the appendage.

However, as shown in Fig. 1, Gillespie teaches an outputs of X input processing circuitry 12 and Y input processing circuitry 14 being presented to arithmetic unit 16, which uses the digital information to derive digital information representing the position and pressure of the finger 8 on a sensing plane 10 (col. 9, lines 3-7). Gillespie also teaches that outputs of the arithmetic unit 16 are also directed to gesture unit 20 (col. 9, lines 29-34), which is used to recognize certain finger gestures performed by a user on sensing plane 10. Gillespie elaborates the gesture unit 20 in terms of determining whether a drag gesture is continuing or is being ended and a new finger action begun by comparing the lift-off finger position and the touchdown finger position (Fig. 1 (20), Fig. 14 (280,286) and col. 36, lines 56-65).

Thus clearly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Gillespie's gesture unit (20) as configured in Fig. 1 notably with an arithmetic unit (16) for the purpose of quantifying the movement of a finger on the sensing plane (10) as taught Gillespie (see Fig. 14 and Fig. 20). (Final Office Action at para. no. 2, pages 2-3).

One of the requirements of establishing a *prima facie* case of obviousness is that "the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP § 2143. The Examiner has acknowledged that "Gillespie does not specifically teach 'a controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements'", as recited in independent claim 1. (Final Office Action at para. no. 3, page 4). By not identifying any specific teaching in Gillespie regarding the limitation "correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage" in independent claim 19, the Examiner appears to be implicitly acknowledging that this limitation is

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not taught by Gillespie. Since Gillespie does not teach or suggest each and every limitation of independent claim 19, the Examiner has not established a *prima facie* case of obviousness of claim 19.

Since Gillespie does not teach or suggest each and every limitation of claim 19, it is not clear if the Examiner is relying on Official Notice, or the concept of inherency, in the rejection of these claims. However, as indicated in the Manual of Patent Examining Procedure, "[o]fficial notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well known." MPEP § 2144.03(A). "It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well known." *Id.* (emphasis in original). The limitations in claim 19 that the Examiner appears to have acknowledged are not explicitly taught or suggested by Gillespie are not well known facts that are capable of instant and unquestionable demonstration as being well known, and it would be inappropriate to simply rely on official notice in this case.

The missing limitations are also not inherent in Gillespie. As the Federal Circuit has stated, "[i]nherent anticipation requires that the missing descriptive material is 'necessarily present,' not merely probably or possibly present, in the prior art." *Trintec Indus., v. Top-U.S.A. Corp.*, 63 USPQ2d 1597, 1599 (Fed. Cir. 2002) (quoting *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)). Gillespie does not generate motion data in the manner recited in claim 19, and this missing limitation is not "necessarily present" in Gillespie.

In addition, even when obviousness is based on a single reference, there must be a showing of suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). In the present case, the Examiner has not identified any suggestion or motivation to modify the Gillespie reference in a manner that would produce the claimed invention. Rather, despite this issue being raised in Applicant's previous Response, the Examiner has again simply indicated in the above block quote that it would be possible to modify Gillespie, without identifying any teaching, suggestion, or motivation, to make such a

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modification. Applicant respectfully submits that no motivation for the Examiner's proposed modification can be found in Gillespie. In fact, not only is there no teaching, suggestion, or motivation disclosed in Gillespie to modify the gesture unit 20 to generate motion data as proposed by the Examiner, such a modification would not appear to make logical sense since the system disclosed in Gillespie already includes a motion unit 18. By failing to identify a motivation to modify the Gillespie reference, the Examiner has failed to provide an essential element required to establish a *prima facie* case of obviousness.

In view of the above, Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of independent claim 19, and the rejection of independent claim 19 under 35 U.S.C. §103(a) should be withdrawn. Since dependent claims 20-26, 28, and 29 further limit patentably distinct claim 19, claims 20-26, 28, and 29 are believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claims 20-26, 28, and 29, and the rejection of dependent claims 20-26, 28, and 29 under 35 U.S.C. §103(a) should be withdrawn.

**J. Rejection of Claim 27 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 27 recites "wherein a conductive rim is formed around a perimeter of the plurality of sensing elements, the method further comprising: driving the conductive rim with an alternating current signal." The Examiner has not identified any disclosure in Gillespie that teaches or suggests a conductive rim, or driving a conductive rim with an alternating current signal, as recited in claim 27. Since dependent claim 27 further limits patentably distinct claim 19, and is further distinguishable over the cited reference, claim 27 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 27, and the rejection of dependent claim 27 under 35 U.S.C. §103(a) should be withdrawn.

**K. Rejection of Claim 30 Under 35 U.S.C. §103(a) as being Unpatentable Over**



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**Gillespie**

Dependent claim 30 recites "wherein the pitch of the plurality of sensing elements ranges between about 10 to 1000 microns." The Examiner has not identified any disclosure in Gillespie that teaches or suggests sensing elements with a pitch as recited in claim 30. Since dependent claim 30 further limits patentably distinct claim 19, and is further distinguishable over the cited reference, claim 30 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 30, and the rejection of dependent claim 30 under 35 U.S.C. §103(a) should be withdrawn.

**L. Rejection of Claim 31 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 31 recites "wherein the pitch of the plurality of sensing elements ranges between about 25 to 250 microns." The Examiner has not identified any disclosure in Gillespie that teaches or suggests sensing elements with a pitch as recited in claim 31. Since dependent claim 31 further limits patentably distinct claim 19, and is further distinguishable over the cited reference, claim 31 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 31, and the rejection of dependent claim 31 under 35 U.S.C. §103(a) should be withdrawn.

**M. Rejection of Claim 34 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 34 recites "wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is less than about 2 millimeters by 2 millimeters." The Examiner has not identified any disclosure in Gillespie that teaches or suggests an array with the dimensions recited in claim 34. Since dependent claim 34 further limits patentably distinct claim 19, and is further distinguishable over the cited reference, claim 34 is believed to be allowable

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over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 34, and the rejection of dependent claim 34 under 35 U.S.C. §103(a) should be withdrawn.

**N. Rejection of Claim 35 Under 35 U.S.C. §103(a) as being Unpatentable Over Gillespie**

Dependent claim 35 recites "wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is a substantially square array with dimensions of about 1.5 millimeters by 1.5 millimeters." The Examiner has not identified any disclosure in Gillespie that teaches or suggests an array with the dimensions recited in claim 35. Since dependent claim 35 further limits patentably distinct claim 19, and is further distinguishable over the cited reference, claim 35 is believed to be allowable over the cited reference. Appellant respectfully submits that the Examiner has not established a *prima facie* case of obviousness of dependent claim 35, and the rejection of dependent claim 35 under 35 U.S.C. §103(a) should be withdrawn.

**CONCLUSION**

For the above reasons, Appellants respectfully submit that the cited references neither anticipate nor render obvious claims of the pending Application. The pending claims distinguish over the cited references, and therefore, Appellants respectfully submit that the rejections must be withdrawn, and respectfully request the Examiner be reversed and claims 1-35 be allowed.

Any inquiry regarding this Response should be directed to either William P. O'Meara at Telephone No. (303) 298-9888, Facsimile No. (303) 297-2266 or Jeff A. Holmen at Telephone No. (612) 573-0178, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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**CERTIFICATE UNDER 37 C.F.R. 1.8:**

The undersigned hereby certifies that this paper or papers, as described herein, are being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300 on this 17<sup>th</sup> day of September, 2006.

By: Jeff A. Holmen  
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### CLAIMS APPENDIX

1.(Previously Presented) An apparatus for controlling the position of a screen pointer for an electronic device having a display screen, the apparatus comprising:

a plurality of sensing elements against which a portion of the tip of a human digit may be placed; and

a controller coupled to each of the sensing elements for sensing an electrical property at each of the sensing elements, the controller configured to generate pixel values representing the portion of the tip of the digit placed against the sensing elements based on the sensed electrical property at each of the sensing elements, the controller configured to generate movement data based on a comparison of successively generated sets of the pixel values, the comparison including comparing a first one of the sets with at least one pixel shifted version of a second one of the sets, the movement data indicative of motion of the tip of the digit across the sensing elements.

2.(Original) The apparatus of claim 1, wherein the values are digital values.

3.(Original) The apparatus of claim 1, wherein the electrical property is impedance.

4.(Original) The apparatus of claim 1, wherein the electrical property is capacitance.

5.(Original) The apparatus of claim 1, wherein each sensing element includes a conductive layer.

6.(Original) The apparatus of claim 5, wherein each conductive layer is a metal.

7.(Original) The apparatus of claim 5, wherein each sensing element further includes a protective layer formed over the conductive layer.

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8.(Original) The apparatus of claim 7, wherein each protective layer is an insulator.

9.(Original) The apparatus of claim 1, and further comprising a protective layer formed over the plurality of sensing elements.

10.(Original) The apparatus of claim 1, and further comprising a substrate, the plurality of sensing elements formed on the substrate.

11.(Previously Presented) The apparatus of claim 1, and further comprising a conductive rim formed around a perimeter of the plurality of sensing elements.

12.(Previously Presented) The apparatus of claim 11, wherein the controller further comprises an alternating current signal source coupled to the conductive rim for driving the conductive rim with an alternating current signal.

13.(Original) The apparatus of claim 12, wherein the controller further comprises an automatic gain controller coupled to the alternating current signal source for controlling the magnitude of the alternating current signal.

14.(Original) The apparatus of claim 4, wherein the controller further comprises an electronic shutter coupled to the plurality of sensing elements for controlling a charge accumulation time of the sensing elements.

15.(Original) The apparatus of claim 1, wherein the plurality of sensing elements are organized into a square array with a plurality of rows of sensing elements and a plurality of columns of sensing elements.

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16.(Original) The apparatus of claim 15, wherein the number of rows and columns of sensing elements ranges between about 15 and 25.

17.(Original) The apparatus of claim 16, wherein the pitch of the plurality of sensing elements ranges between about 10 to 1000 microns.

18.(Original) The apparatus of claim 16, wherein the pitch of the plurality of sensing elements ranges between about 25 to 250 microns.

19.(Original) A method of controlling the position of a screen pointer for an electronic device having a screen display, the method comprising:

placing a portion of an appendage of the human hand against a plurality of sensing elements;

sensing an impedance at each of the sensing elements;

generating digital values representing the sensed impedance at each of the sensing elements, the digital values representing digital images of the portion of the appendage placed against the sensing elements;

correlating at least one version of a first one of the digital images with at least one version of a second one of the digital images to generate motion data indicative of motion across the sensing elements by the appendage; and

adjusting the position of the screen pointer in accordance with the motion data.

20.(Original) The method of claim 19, wherein the impedance is capacitance.

21.(Original) The method of claim 19, wherein each sensing element includes a conductive layer.

22.(Original) The method of claim 21, wherein each conductive layer is a metal.

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23.(Original) The method of claim 21, wherein each sensing element further includes a protective layer formed over the conductive layer.

24.(Original) The method of claim 23, wherein each protective layer is an insulator.

25.(Original) The method of claim 19, wherein a protective layer is formed over the plurality of sensing elements.

26.(Original) The method of claim 19, wherein the plurality of sensing elements are formed on a substrate.

27.(Previously Presented) The method of claim 19, wherein a conductive rim is formed around a perimeter of the plurality of sensing elements, the method further comprising:  
driving the conductive rim with an alternating current signal.

28.(Original) The method of claim 19, wherein the plurality of sensing elements are organized into a square array with a plurality of rows of sensing elements and a plurality of columns of sensing elements.

29.(Original) The method of claim 28, wherein the number of rows and columns of sensing elements ranges between about 15 and 25.

30.(Original) The method of claim 19, wherein the pitch of the plurality of sensing elements ranges between about 10 to 1000 microns.

31.(Original) The method of claim 19, wherein the pitch of the plurality of sensing elements ranges between about 25 to 250 microns.

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32.(Previously Presented) The apparatus of claim 1, wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is less than about 2 millimeters by 2 millimeters.

33.(Previously Presented) The apparatus of claim 1, wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is a substantially square array with dimensions of about 1.5 millimeters by 1.5 millimeters.

34.(Previously Presented) The method of claim 19, wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is less than about 2 millimeters by 2 millimeters.

35.(Previously Presented) The method of claim 19, wherein the plurality of sensing elements are organized into an array with a plurality of rows of sensing elements and a plurality of columns of sensing elements, and wherein the array is a substantially square array with dimensions of about 1.5 millimeters by 1.5 millimeters.



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**EVIDENCE APPENDIX**

None.

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**RELATED PROCEEDINGS APPENDIX**

None.